GETTING TALENT THAT FITS:

(WM+g+H^2=PERFORMANCE)

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"Intelligence without ambition is a bird without wings"

-Salvador Dali

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Abstract: Employee work performance is critical to organizational success. Identifying employee attributes that correlate to high work performance is therefore of strategic interest to organizational leaders, as individuals with those traits can be targeted during the hiring process. While extant literature has indicated a positive relationship between work performance and individual differences including cognitive ability, working memory, and personality, no single study has examined the predictive effects of each of these differences simultaneously. Moreover, some preliminary research suggests that the sixth personality factor specified in the HEXACO model, Honesty-Humility (H Factor), may also predict work performance; further research is warranted to investigate this relationship. Finally, self-efficacy has been shown to moderately predict performance and to mediate individual differences on performance. The present quantitative correlational study thus sought to establish the unique effects of working memory, cognitive ability, and H Factor on performance via self-efficacy using four established scales, one researcher-developed self-report measure tested for validity during Phase 1, and a supervisor assessment of employee job performance. The sample size was 197 participants who were employed at nine U.S. distribution plants owned by a large food distribution company. Analyses conducted using structural equation modeling (SEM) provided support for the predicted relationships between the study variables. Cognitive ability directly predicted performance while working memory and H Factor predicted performance via self-efficacy. The study's conclusions suggest that recruiters should consider applicants' cognitive skills, personality—including the H Factor—, and self-efficacy during the hiring process.

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CHAPTER I

INTRODUCTION

Optimizing work performance is one of the greatest concerns facing organizations today. Their success is largely predicated on the performance of their employees, who play a significant role in determining the overall output and results of an organization (Hansen, 2008). For that reason, researchers and practitioners alike have sought to identify factors that contribute to an employee's work performance at the individual level, and have determined that those factors can be broadly classified as job-, personal-, and organizational-related (Battistelli, Montani, & Odoardi, 2013; Djeriouat & Trémolière, 2014).

Several studies have attempted to determine whether a meaningful and unique relationship exists between work performance and factors such as cognitive ability, working memory, and personality (Edwards, Franco-Watkins, & Webster, 2015; Engle & Kane, 2004). Research has consistently shown that those factors predict performance across a variety of tasks (Djeriouat & Trémolière, 2014; Wai & Rindermann, 2015). For example, a meta-analysis by Schmidt and Hunter (1998) demonstrated that cognitive ability is an excellent predictor of task performance. Furthermore, the classic meta-analysis of Barrick and Mount (1991) demonstrated that aspects of the Five-Factor Model of personality—primarily Conscientiousness and Exraversion—are strong predictors.

Compared to cognitive ability and personality, working memory is relatively new in the study of work performance. However, recent meta-analytic research strongly suggests that it also predicts task performance (Edwards et al., 2015). However, no single study examines the unique predictive effects of each of these individual factors simultaneously.

There have been significant advances in our understanding of individual personality beyond the Five-Factor Model. The HEXACO model is a notable improvement, largely due to the identification of an additional primary factor: Honesty-Humility (H Factor). Hence, there is a significant opportunity for expanding extant knowledge in the field of organizational behavior by incorporating cognitive ability, working memory, and the HEXACO model of personality into a single study in order to gain a better understanding of the unique predictive effects of each individual difference on work performance. This is one of the primary goals of the current research.

Another primary goal is to achieve a better understanding of how such distal individual differences relate to work performance. Identifying unique empirical relationships is important, particularly for personnel selection, yet it can fall short in furthering our understanding of organizational behavior. It is therefore imperative that we improve our understanding of how and why such relationships unfold. Self-regulation has long been suggested and supported to mediate relationships between distal individual differences and performance (Chen, Casper, & Cortina, 2001; Philips & Gully, 1997; Wallace & Chen, 2006). It operates through a set of psychological subfunctions that must be developed and mobilized for self-directed change (Bandura, 1991). The psychological aspect of self-regulation generates motivation toward the desire or intention of accomplishing a particular task. One of the most tried-and-true aspects of self-regulation is self-efficacy (Bandura, 1997). Previous meta-analytic research has demonstrated that self-efficacy

moderately predicts job performance (Stajkovic & Luthans, 1998) and that it mediates individual differences—such as cognitive ability and conscientiousness—on performance (Chen et al., 2001).

Combining the two aforementioned goals, the current research sought to move beyond the assumption that performance is best predicted by just general cognitive ability and Conscientiousness (g+C); it incorporated working memory and the H Factor into the discussion. Although they have yet to be studied in this combination, they hold theoretical promise in predicting and explaining significant variance in work performance due to their unique and positive impact on self-efficacy. Given the constraints of this study, cognitive ability alone was chosen for analysis with the aforementioned constructs. Exploring their relationship with Conscientiousness is therefore a suggested area for future research. See Figure 1 for an overview of the hypothesized relationships.

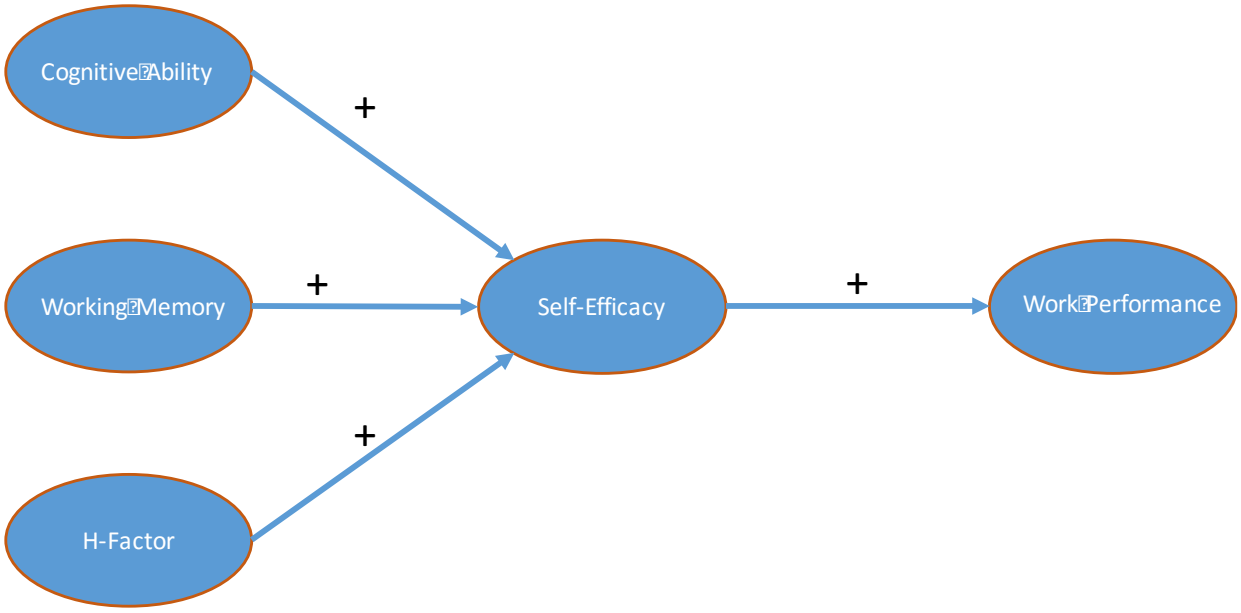

Figure 1. Theoretical model of expected relationships. The other five factors in the HEXACO model of personality were excluded from the study.

Research Objectives

The following research objectives were followed in order to achieve the primary goals of this study:

1. Review the literature pertaining to working memory, cognitive ability, personality, self-efficacy, and work performance, as well as their integration.

2. Establish the unique effects of working memory, cognitive ability, and H Factor on performance via self-efficacy.

3. Identify the most appropriate combination pattern of working memory, cognitive ability, and H Factor in predicting work performance.

CHAPTER II

REVIEW OF LITERATURE

This review of literature addresses the existing research on the various individual differences under investigation in this study, in addition to previous studies on work performance and self-efficacy in an organizational context.

Work Performance as Role-Based Performance

The demanding and competitive nature of the business landscape underscores the importance of ensuring high employee performance through a careful and effective hiring process (Cohen-Charash & Spector, 2001; Schmidt & Hunter, 2004). An effective hiring process is particularly imperative because it ensures that those individuals selected for employment are best suited for the specific organization and its leaders, in order to both enable the employee's individual growth and facilitate the organization's achievement of its goals.

But predicting work performance—as hiring processes are meant to do—can be difficult because of the wide variance in approaches for measuring and understanding this concept (Koopmans et al., 2011). Given this variance, it is understood not as a single unified construct, but rather as an abstract and multidimensional one, consisting of more than one kind of behavior (Campbell, 1990). This multidimensional nature suggests that there are different performance standards for each distinct job, encompassing the full spectrum of expectations placed on employees based on their job position and description (Loi, Ngo, Zhang, & Lau, 2011). In

addition to its multidimensional nature, work performance can also be described at an individual level or at a task level (Campbell, 1990; Ng & Feldman, 2014, Welbourne, Johnson, & Erez, 1998). Campbell (1990) has identified certain dimensions that can be used to assess work performance, including task-specific and non-task-specific behaviors, written and oral communication, effort, personal discipline, interpersonal assistance, supervisory components, and managerial tasks.

In an effort to expand the existing knowledge surrounding this construct, work performance was operationalized in this study using the role-based performance definition conceptualized by Welbourne et al. (1998). Role-based performance encompasses the dimensions of task, organizational citizenship, innovation, and career (Welbourne et al., 1998). The task component focuses on meeting the demands of one's job description (Welbourne et al., 1998). Employees who are considered competent in their job deliver the expected quantity and quality of work output, perform accurately, and satisfy customers (Welbourne et al., 1998). Although leaders and organizational culture play a role in the task performance of employees (Hamzah, Othman, Hashim, Rashid, & Besir, 2013), employee engagement is also an important contributing factor (Bothma & Roodt, 2012; Breevaart, Bakker, Demerouti, & Derks, 2015). According to Breevaart et al. (2015), work performance improves when employees are more engaged in their work, which can manifest in the adoption of self-leadership behaviors.

The organizational citizenship dimension of role-based performance refers to the initiative that an employee takes to perform tasks that are not necessarily required (Welbourne et al., 1998). Organizational citizenship behaviors are manifested in the form of helping other employees, having a voice and initiative, taking charge, and displaying courtesy (Jiao, Richards, & Hackett, 2013). As such, it is often regarded as involving extra-task behaviors that do not

necessarily pertain to an employee's main job description (Fox, Spector, Goh, Bruursema, & Kessler, 2012). According to Jiao et al. (2013), employees are more likely to perceive that organizational citizenship is part of their job when they are operationalized in terms of helping and having a voice in the organization. In addition, the personal values and beliefs of employees are significantly associated with the organizational citizenship behavior of helping peers, especially when compared to personality traits and job satisfaction (Arthaud-Day, Rode, & Turnley, 2012).

The innovation component of role-based performance pertains to the level of creativity that employees display regarding their job (Welbourne et al., 1998). This can manifest through generating new ideas, being involved in the implementation of a new idea, searching for ways to make an improvement in the organization, and developing strategies to improve routine and processes (Welbourne et al., 1998). Factors such as feedback from managers and leaders, organizational inducement, and psychological resilience have all been found to play a role in the engagement of employees in innovative behaviors within the organization (Battistelli et al., 2013; Shin, Taylor, & Seo, 2012). Personal demographics such as age and tenure, in contrast, do not influence employees' likelihood of engaging in innovative behaviors (Ng & Feldman, 2013).

Finally, the dimension of career performance pertains to the effort that employees make to acquire the necessary skills and qualifications to progress professionally within the organization (Welbourne et al., 1998). Career performance manifests through setting and pursuing career goals, engaging in skill development opportunities, making progress, and seeking opportunities for professional growth (Welbourne et al., 1998). According to Russell, Ferris, Thompson, and Sikora (2016), opportunities for career advancement in an organization should be available to all employees. However, lack of organizational support and resources can

be a barrier for many employees to pursuing opportunities for career advancement (Ng & Feldman, 2014). But it is the behaviors of employees themselves that remain the most important determinant of career growth (Ng & Feldman, 2014). Ng and Feldman (2014) have asserted that career success is subjective and may be influenced by different factors such as motivation and personality.

Cognitive Ability and Performance

In addition to the four dimensions of role-based performance as identified by Welbourne, cognitive ability has also been shown to influence work performance. Cognitive ability, or intelligence, is the capacity to learn different lessons from one's experiences, solve a variety of problems, and use one's knowledge to adapt to new situations (O'Boyle, Humphrey, Jeffery, Hawver, & Story, 2005). It is specifically related to knowledge, judgment, computation, and decision-making power. Research supports the relationship between employees' cognitive ability and job performance (Kuncel, Rose, Ejiogu, & Yang, 2014; Schmidt & Hunter, 2004; Wai & Rindermann, 2015). In fact, cognitive ability is generally regarded as the single best predictor of job performance (Schmidt & Hunter, 1998; Wai & Rindermann, 2015), and higher cognitive ability among CEOs has been linked to greater organizational success in terms of gross revenue (Wai & Rindermann, 2015). The principal executive functions that are dependent on an individual's cognitive abilities include logical reasoning, deductive reasoning, problem solving, planning, and strategy building (Enright, O'Connell, MacKinnon, & Morgan, 2015)—skills that can be directly connected to work performance.

Among the studies that have found a significant association between general cognitive ability and job performance is that of Schmidt and Hunter (2004). They identified cognitive ability as the best predictor of performance when compared to various factors, including other

types of abilities or intelligence, personality traits, life disposition, and job experience (Schmidt & Hunter, 2004). Given the high predictive power of general cognitive ability on job performance, it is a critical factor in human resource decisions—particularly during the hiring process. Researchers have argued that present applications of intelligence-related tests within organizations enable those with high intelligence level scores to gain better access to developmental resources, which in turn allows them to develop new abilities over time, and eventually perform their jobs better (Byington & Felps, 2010). Moreover, Schmidt (2002) demonstrated that a large body of literature supports the relationship between general cognitive ability and job performance, and stressed the importance of seriously considering individuals' general cognitive abilities during the hiring process. The statistical strength of the relationship between cognitive ability and job performance is also higher than the relationships measured in most studies involving psychological research, which further underscores the high predictive strength of general cognitive ability on work performance (Schmidt & Hunter, 2004).

However, factors within an organization can affect the relationship between cognitive ability and work performance. For example, Seddigh et al. (2015) demonstrated that the office environment can serve as a mediator, improving the cognitive abilities of employees. In particular, offices that are spacious and open positively influence employee performance by contributing to an increase in the working memory capacity of employees. In such spaces, employees can visualize, observe, and analyze more objects of their external environment, thus increasing their working memory capacity (Seddigh et al., 2015).

The present study hypothesized first that higher cognitive abilities are associated with higher job performance. This hypothesis is based on the finding of previous researchers that cognitive ability is one of the most reliable predictors of job performance (Schmidt & Hunter,

1998; Wai & Rindermann, 2015). This was my first hypothesis, which constituted a constructive replication:

Hypothesis 1: Cognitive ability is positively related to work performance.

Working Memory and Job Performance

Working memory is a precise information-processing mechanism that explicates and predicts human learning and task performance (Oberauer, Süß, Wilhelm, & Wittmann, 2000). It is typically described as a multicomponent system that maintains, stores, and processes information on a temporary basis. It consists of a number of subsystems and a central executive component that monitors and controls ongoing mental operations and actions involved in higher-order cognitive functions such as reasoning, problem solving, and decision making (Oberauer et al., 2000).

While cognitive ability and working memory are moderately to strongly related, they remain two distinct cognitive activities. Research supports this notion, recognizing working memory and cognitive ability as different, albeit correlated, constructs (Ackerman, Beier, & Boyle, 2005; Bühner, König, Pick, & Krurnm, 2006; Friedman et al., 2006). The two differ in a number of ways. Perhaps the most important distinction is that working memory's cognitive mechanism is explicitly defined, whereas cognitive ability is defined through the shared variance among measures of other constructs. That is, no specific cognitive mechanism is implicated in the definition or operationalization of cognitive ability. Working memory is distinguished theoretically from cognitive ability by the fact that it directly measures executive control and information processing capabilities that are important to learning and performance (Bleckley, Durso, Crutchfield, Engle, & Khanna, 2003).

Another difference is that the development of working memory tasks was theory-driven—with the goal of testing theories of working memory—and emphasized intraindividual processes, whereas the development of cognitive abilities tasks was data-driven—with the goal of predicting real-world outcomes—and emphasized interindividual differences (Conway & Kovacs, 2013).

Cognitive ability is particularly important for reasoning and problem solving in complex tasks because it has an indirect effect on task performance through the acquisition of knowledge, which is thought to be more significant than the direct effect (Gottfredson, 2002). Thus, the primary mechanism linking cognitive ability to task performance is knowledge acquisition such that higher levels of "ability to learn" lead to more task-based knowledge, which in turn is reflected in higher task performance. When it comes to task performance, therefore, it appears that cognitive ability and working memory are closely linked.

According to Swanson (2015), working memory capacity (WMC) is the critical component that enables individuals to perform at higher levels. That is, the higher an individual's WMC, the greater his or her logical reasoning, computational skills, learning, and overall problem solving abilities. The construct of WMC is related to the way that human memory functions—it is essentially a large storage space that retains images, sounds, feelings, and conclusions in separate compartments. The more storage space available, the greater an individual's ability to decide and compute. In other words, more space in one's working memory will enable the storage of more information, thus facilitating an individual's performance of a greater variety of tasks. Borrowing from a computer information-processing framework, if cognitive ability is the "human hard drive," working memory is the "human cache."

As Edwards et al. (2015) explained, working memory serves to retrieve already- stored information to provide an immediate solution to an issue at hand. Moreover, it allows an individual to adapt current knowledge to a situation instead of attempting to provide a solution when that individual may not have current knowledge specific to that situation.

Research indicates that working memory is an excellent predictor of language fluency, sentence learning, reading comprehension, academic achievement, the ability to follow directions, multitasking, reasoning, and complex problem-solving (Daneman & Carpenter, 1980). According to Kane and Engle (2002), working memory predicts performance for a variety of functions, including those requiring memory retrieval and perceptual tasks. Similar to cognitive ability, individual differences in working memory predict learning and thereby performance across a wide range of tasks and perspectives. Extant working memory literature has clearly demonstrated that an individual would be unable to accomplish many cognitive tasks if their working memory were inadequate (Lewandowsky, Yang, Newell, & Kalish, 2012; Smith & Kosslyn, 2007). This underscores the integral role of working memory in predicting an individual's performance in a wide range of perspectives, extending above and beyond those outcomes achieved by cognitive ability. Indeed, there is burgeoning evidence that working memory predicts performance better than cognitive ability (Hicks, Harrison, & Engle, 2015).

The present study hypothesized that higher working memory abilities are associated with higher job performance, specifically in terms of task performance. This hypothesis is supported by previous research on the connection between working memory and task performance (Kane & Engle, 2002). Therefore the second hypothesis was as follows:

Hypothesis 2: Working memory is positively related to work performance.

Honesty-Humility and Work Performance

The H Factor (Honesty-Humility) is one of the six dimensions of the HEXACO model of personality that was developed by Lee and Ashton (2004). The addition of this sixth factor represents significant progress from the earlier Five-Factor model (comprised of Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience). The HEXACO model therefore consists of Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O).

Lee and Ashton (2014) concluded that HEXACO is comparable to both the Big 5 and Dark Triad personality models (the Dark Triad focuses on the personality traits Machiavellianism, narcissism, and psychopathy). However, HEXACO is more robust, instilling more confidence in its use for research and practice.

As opposed to the factors of the previous personality model, HEXACO's H Factor can provide a deeper understanding of work performance (Oh et al., 2014). Research demonstrates that it captures significant variance in a variety of important organizational outcomes (e.g., deviance, employee traits, performance; Ashton & Lee, 2008). This theoretical rationale is rooted in the notion that a high level of H Factor is associated with various positive outcomes such as prosocial behaviors, religiosity, cooperation, modesty, and happiness (Aghababaei, Mohammadtabar, & Saffarinia, 2014; Hilbig, Heydasch, & Zettler, 2014; Zettler, Hilbig, & Heydasch, 2013). Conversely, a low level of H Factor is associated with negative behaviors and outcomes such as materialism, lack of ethics, and anti-social acts (Aghababaei et al., 2014; Djeriouat & Trémolière, 2014).

The dual nature of the Honesty-Humility dimension specifically integrates the personality facets of integrity and modesty (Hilbig et al., 2014). According to Lee and Ashton (2004),

honesty includes sincerity, loyalty, faithfulness, and modesty. The key elements of humility, in turn, include having the ability to acknowledge personal limits, being open to advice from others, keeping accomplishments in perspective, and having a low level of self-focus and an appreciation of others (Tangney, 2002). In combination, these characteristics describe an authentic employee or a good company citizen—someone who will ask for help, be courteous and transparent, and not break rules. On the other end of the spectrum, a study of the effects of the dark personality traits of Machiavellianism, narcissism, and psychopathy on supervisor ratings of performance was conducted by Smith, Wallace, and Jordan (2015). They determined that employees with higher levels of narcissism and psychopathy have poorer task performance and engage in fewer helping behaviors than employees low in those traits (Smith et al., 2015). Conversely, this means that high levels of H Factor would be positively associated with performance.

Because the HEXACO model was introduced relatively recently, there is still limited knowledge regarding how the Honesty-Humility dimension can predict work performance, especially when compared to other factors such as cognitive ability and those in the Big Five. However, certain aspects of work-related functions such as situational decision-making, ethics, and professional growth have been correlated with high levels of Honesty-Humility (Zettler et al., 2013). Honesty has specifically been found to explain adjustment in work performance above and beyond the variance associated with cognitive ability, and has even been found to explain incremental variance in work performance (Osibanjo, Akinbode, Falola, & Oludayo, 2015; Schmidt & Hunter, 1998). Osibanjo et al. (2015) noted that work ethics operationalized in terms of honesty and integrity contribute to positive work performance.

In support of the importance of humility in the workplace, Collins (2005) found that companies with CEOs who possessed a combination of humility and strong professionalism or competence went from being regarded as "good" to "great" regarding stock performance (p. 138). Leaders who possess this trait tend to better manage junior staff effectively and excel at the helm of their organization.

The present study hypothesized that a higher level of H Factor is associated with higher job performance. Furthermore, given the minor relationship exhibited between H Factor and the other aspects of the HEXACO model, I expected that H Factor would still account for significant variance above and beyond the other five factors of the HEXACO model—Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. The third hypothesis was therefore:

Hypothesis 3: H Factor is positively related to work performance.

The Mediating Role of Self-Efficacy

Self-efficacy is defined as an individual's belief in his or her ability to organize and execute the courses of action required to produce given accomplishments (Bandura, 1997). Various researchers (Austin & Klein, 1996; Phillips & Gully, 1997) have argued that self-efficacy mediates cognitive ability and performance—a claim that is strongly supported by current studies (e.g., Chen et al., 2001). Individuals with higher self-efficacy levels are more likely to engage in and succeed at work tasks (Phillips & Gully, 1997). Research suggests that many of the outcomes associated with self-efficacy actually stem from cognitive ability—the higher one's cognitive ability, the better one is able to learn and succeed (Hunter, 1986; Hunter & Hunter, 1984), thereby boosting self-efficacy (Bell & Kozlowski, 2002).

Weekley and Ployhart (2005) demonstrated that employees' cognitive ability is directly related to their assimilation of job knowledge, which in turn determines work performance. In essence, employees with higher cognitive ability accumulate the knowledge needed for successful job performance with more facility (Weekley & Ployhart, 2005). Chen, Gully, Whiteman, and Kilcullen (2000), moreover, found that self-efficacy is a significant motivational influence in relation to performance. Their study also showed that self-efficacy, cognitive ability, and goal orientation all lead to an increase in performance, and that self-efficacy plays a mediating role between cognitive ability and performance (Chen et al., 2000). As such, the fourth hypothesis, while not new, constituted an essential constructive replication in the presence of WM and Honesty-Humility:

Hypothesis 4: Self-efficacy mediates the relationship between cognitive ability and work performance.

In addition, self-efficacy is likely to mediate the relationship between H Factor and work performance. Honesty-Humility, represented by various traits including sincerity, loyalty, faithfulness, and modesty, is linked to performance through a willingness and desire to learn and do more for others—not just for oneself. The work motivation literature strongly suggests that these traits are likely to manifest as a motivational approach in the form of learning from mistakes and feedback, persevering through tough times, making decisions, and appreciating others (Exline & Hill, 2012; Hilbig et al., 2014; Tangney, 2000; Zettler et al., 2013). Furthermore, current research has indicated that the elements associated with Honesty-Humility are likely to lead to positive outcomes, including improved performance (Collins, 2005; Vera & Rodriguez-Lopez, 2004).

Scholars in organizational change and leadership studies have stressed the importance of elements associated with Honesty-Humility for employees to succeed in the unpredictable work environment of the 21st century, particularly a willingness to recognize areas of weakness and an ability to learn new skills and adapt to the changing demands of the workplace (Owens, Rowatt, & Wilkins, 2010; Weick, 2001). Such elements are likely to increase self-efficacy in individuals since they serve as positive, motivating factors that can boost one's confidence to facilitate change and take action. As discussed previously, individuals with higher self-efficacy levels are more likely to engage in and persist with on-task efforts, and eventually to succeed on task (Phillips & Gully, 1997). Although additional research is needed, the H Factor appears to have unique raw ingredients capable of boosting self-efficacy, thereby leading to higher rates of performance.

Despite the paucity of data on the relationship between Honesty-Humility and self-efficacy, scholars have linked humility and other dimensions associated with the H Factor, including sincerity, with a heightened level of self-awareness and emotional maturity, which in turn work to foster self-efficacy (Yokley, 2012). In particular, the facet of humility and the ability to accept the fact that all individuals make mistakes can cultivate a desire to improve, as well as a belief in one's own ability to improve, thus increasing self-efficacy (Yokley, 2012), which can in turn improve performance. Therefore, it is a strong possibility that there is a mediating relationship between self-efficacy, H Factor, and performance. Additionally, given that the Honesty-Humility factor is unique compared to the five other major dimensions of personality, it was expected that it would predict performance via self-efficacy while controlling for the other five factors. This led to the fifth hypothesis:

Hypothesis 5: Self-efficacy mediates the relationship between H Factor and work performance.

The next hypothesis aimed to investigate the relationship between working memory, self-efficacy, and work performance. Hoffman and Schraw (2009) conducted a study on the influence of self-efficacy and WMC on mathematical problem-solving performance, response time, and efficiency. The results of their experiment showed that there is a significant relationship between self-efficacy and problem-solving performance and efficiency (Hoffman & Schraw, 2009). It therefore appears that working memory boosts self-efficacy, at least in basic laboratory studies. Additionally, Pe, Koval, and Kuppens (2013) found that working memory is positively related to subjective well-being. Specifically, individuals who were more skilled at retaining and updating positive working memory showed higher levels of life satisfaction and affect balance (Pe et al., 2013).

In particular, higher levels of self-efficacy are positively related to subjective well-being. Working memory is likely to relate to self-efficacy because individuals with high working memory are more likely to gain positive task-related experiences and task-related knowledge from an ability to more quickly access stored information and process higher amounts of information. These positive experiences will lead, in turn, to higher rates of success and increased subjective well-being, which breed self-efficacy (cf. Edwards et al., 2015).

Furthermore, research on self-regulated learning has suggested a relationship between working memory and self-efficacy. Pintrich's (1999) study of the role of motivation beliefs, including self-efficacy, on self-regulated learning suggests that high working memory may be associated with higher self-efficacy, which facilitates self-regulated learning. While the relationship between working memory and self-efficacy warrants more direct analysis, Pintrich's

(1999) findings point to the possibility that an individuals' high working memory—which facilitates the regulatory and monitoring processes required in self-regulated learning—boosts self-efficacy, which in turn contributes to more successful self-regulated learning. In essence, individuals with a high working memory are able to process and comprehend information better—an ability that is likely to instill a higher level of confidence in their potential to excel academically, which in turn increases self-efficacy. A study by Da Costa Leita (2013) also found a relationship between self-efficacy, working memory, and performance in an academic context. Specifically, the study found that self-efficacy and working memory are positively related to various aspects of performance in a research-intensive instructional setting (Da Costa Leita, 2013).

The findings of Da Costa Leita (2013) and Pintrich (1999) support other research suggesting that self-efficacy can influence academic performance when combined with certain individual differences like working memory and metacognition (Hoffman & Schraw, 2009; Hoffman & Spatariu, 2008; Landine & Stewart, 1998). Given the potential relationship between working memory and self-efficacy in determining academic performance, it seemed likely that a similar relationship existed in terms of the influence of working memory and self-efficacy on work performance. As such, the sixth and final hypothesis was:

Hypothesis 6: Self-efficacy mediates the relationship between working memory and work performance.

Integrated Model

By integrating Hypotheses 1–6, the full model was tested, as depicted in Figure 1. In short, it was expected that there would be support for each hypothesis in the model simultaneously. Finding such support would demonstrate the unique effects of cognitive ability,

working memory, and Honesty-Humility on work performance as mediated by self-efficacy. Theoretically and practically, it was anticipated that such findings would add two new predictors to be considered for personnel selection (i.e., working memory and Honesty-Humility). Moreover, it was expected that they would contribute new insight into how to better boost self-efficacy—knowledge that is critical for employee development. These implications are revisited in the discussion section.

CHAPTER III

METHODOLOGY

The purpose of the study was twofold. The first goal was to expand extant knowledge in the field of organizational behavior by incorporating cognitive ability, working memory, and the HEXACO model of personality into a single study to gain a better understanding of the unique predictive effects of each individual difference on work performance. The second goal of the study was to achieve a better understanding of how such distal individual differences relate to work performance. Although it is important to identify unique empirical relationships, particularly for the purpose of personnel selection, this approach can fall short in furthering our understanding of organizational behavior. It is therefore imperative that we improve our understanding of how and why such relationships unfold. Research has long suggested the role of self-regulation, or self-efficacy, in mediating relationships between distal individual differences and performance (Chen et al., 2001; Philips & Gully, 1997; Wallace & Chen, 2006). To further examine this role, self-efficacy was tested and modeled as a mediator of the relationship between cognitive ability, working memory, the H Factor, and job performance.

I strove to accomplish the following three research objectives in an effort to achieve the primary aim of this research study:

1. Review the literature pertaining to working memory, cognitive ability, personality, self-efficacy, and work performance, as well as their integration.
2. Establish the unique effects of working memory, cognitive ability, and H Factor on performance via self-efficacy.
3. Identify the most appropriate combination pattern of working memory, cognitive ability, and H Factor in predicting work performance.

Research Design

The present study used a cross-sectional design that consisted of a self-report measurement of self-efficacy and honesty/humility, performance tests for ability and working memory, and supervisor ratings of job performance.

Participants and Procedures

The study sample included employees from nine distribution plants located in the United States that were owned by a large food distribution company. Invitations were sent to 441 participants with 298 employees completing at least one of the measures. Surveys that were not fully completed (with all measurement tools completed) were excluded from the dataset, as were those surveys completed by individuals who had been employed for fewer than 90 days. The resulting sample size after all exclusions was 197, which represented a 45% response rate. The sample was 63% male and 37% female. 75% of participants identified as Hispanic, 21% White, 3% Asian, and 1% African American. The sample ranged in age from under 20 (3%), 21-30 (28%), 31-40 (29%), 41-50 (22%), and 51+ (18%).

Measures

Five measures were employed in the study, which are described below.

Working Memory Measure. The Edwards, Wallace, and Franco-Watkins Working Memory Measure was used to assess working memory (WM) using the operation span (O-span) task. The O-span task is a reliable measure of WM and is the most widely used indicator of working memory capacity (WMC). The O-span task requires test-takers to maintain information in memory, such as words or numbers, while simultaneously processing other information in the task, such as math equations or counting. I also planned to use the symmetry span (S-span) task in this study. However, there was a coding issue with the S-span task during data collection that yielded invalid scores, so only the O-Span task was used.

The O-span task consists of sets of simple mathematical operations (e.g., 8/4 + 3 =7?) coupled with concrete nouns, with the set size varying from 2 to 5 operations and words per set. There are a total of 42 math-word pairs, and 12 sets are used in the task. As the set size increases, it becomes increasingly difficult to remember the words in the correct order while simultaneously processing the mathematical operations. Participants are presented with the math equation and then have to state it aloud and determine whether the number after the equal sign is correct or incorrect. Next, participants state the word and have to maintain all words from a given set in WM until a prompt on the screen indicates that the participant has to write down all the words from the set; the words have to be recalled in the exact presented order. WM is assessed by the total number of correctly recalled words in the correct serial position, while attempting to maintain a high degree of accuracy (85% or greater) on the mathematical operation portion of the task. The reliability of the O-span task using the described scoring method is .81.

HEXACO measure. A recently validated measure of the HEXACO was used (Wallace & Edwards, 2015). This measure consists of 96 items across the six primary HEXACO domains: Honesty-Humility, Emotional Control, Extraversion, Conscientiousness, Openness, and

Agreeableness. The psychometrics reported by the authors were excellent, with internal consistency for each factor over .80. CFAs meet or exceed the conservative estimate of Hu and Bentler (1999). For the current study, the internal consistency was .72 for the H Factor.

Cognitive ability measure. Cognitive ability involves the mechanisms of how we learn, remember, solve problems, and pay attention (Arthur et al., 2014). A 60-item measure of cognitive ability that has a time limit of 10 minutes was used. The measure assesses verbal and numerical reasoning and is highly correlated with other measures of cognitive ability (Arthur et al., 2014; Edwards et al., 2015). Arthur, Glaze, Villado, and Taylor (2010) reported a retest reliability coefficient of .78 (mean retest interval = 429.16 days, *SD* = 54.84) for an equivalent form of this test, along with a convergent validity of .72 with the Thurstone Test of Mental Alertness. In the present study, a split-half reliability with Spearman-Brown corrections for scores on the ability test was .92.

Self-efficacy measure. A self-efficacy measure was designed for this study (see Appendix A). The items were developed following principles and guidelines recommended by Bandura (1997) for the development of self-efficacy scales. The measure includes a total of six items that are scored on a 5-point Likert scale from 1 = Strongly disagree to 5 = Strongly agree, such that higher scores are indicative of greater self-efficacy. This instrument was tested using the CFA/SEM framework, and the results are reported as Phase 1 of the study in the next chapter.

Performance measure. To measure performance, Welbourne et al.'s (1998) role-based performance scale was used. The scale assesses aspects of task, citizenship, innovation, and career performance. Supervisors of respective employees completed this measure using each

subordinate as a reference point for his/her performance. The internal consistency for scores on the performance measure in the present study was .97.

Data Analysis Strategy

First, the psychometric properties (e.g., means, SDs, item-total correlations, reliability) and factor structure of the measures were assessed. Analyses were conducted using structural equation modeling (SEM) in Mplus software. The mediation hypothesis was examined by obtaining point estimates of the indirect effects and the bias-corrected and accelerated 95% confidence intervals around the effects using a bootstrapping method (see MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2004; Shrout & Bolger, 2002; Williams & MacKinnon, 2008). The full structural equation model was hypothesized by estimating 5,000 bootstrap samples with ability, working memory, and honesty-humility as the independent variables, self-efficacy as the mediator, and performance scores as the dependent variable. SEM allows for simultaneous and complete tests of all of the relationships.

CHAPTER IV

RESULTS

This chapter presents the results of the research in a descriptive textual format as well as with tables.

Evaluating the Self-Efficacy Measure

Because the self-efficacy measure was created for this study, the psychometric properties of the scale were assessed as Phase 1. The measure included a total of six items scored on a 5-point Likert scale from 1 = Strongly disagree to 5 = Strongly agree. First, the internal consistency of the items was examined and it was discovered that one item needed to be removed as it had a very low item–total correlation. The remaining five items yielded an internal consistency of .73, and I proceeded with these items for the factor analysis. A CFA with these five items yielded good fit: Chi-Square (5) = 3.182, CFI = 1.0, SRMR = .01, RMSEA < .0005. Therefore these five items were used in the analyses.

Descriptive Statistics

Means, standard deviations, and correlations are presented in Table 1. There are significant positive correlations among ability, humility, working memory (O-span), and performance, which tentatively support hypotheses 1–3. However, there is not a significant bivariate relationship between self-efficacy and performance. This is at odds

with the organizational behavior literature, which has typically reported a significant positive relationship between self-efficacy and performance (Stajkovic & Luthans, 1998). Nevertheless, the hypotheses were assessed using the full model for the purpose of the present study.

Table 1

Correlations Among the Study Variables

Variable	*M*	*SD*	1	2	3	4
1. Working memory	33.45	13.57				
2. H Factor	3.70	0.67	.414**			
3. Cognitive ability	64.36	17.23	.361**	.292**		
4. Self-efficacy	4.34	0.49	.128	.233**	.106**	
5. Work performance	3.34	0.70	.233**	.164**	.324**	.068

Note. *M* = Mean; *SD* = Standard Deviation.
* $p < .05$
** $p < .01$

Hypothesized Model

Mplus v7 was used to run the full hypothesized path model for the outcome of work performance with the direct and indirect effects as hypothesized. The hypothesized model converged; however, fit indices did not indicate a good model fit. The relative χ^2 value, also referred to as the normed χ^2 value, was computed by dividing the χ^2 index value of the fitted model by the model degrees of freedom (158.88 = 2.60). A value of 5 or less is considered a good model fit (Schumacker & Lomax, 2004). The root mean square error of approximation (RMSEA) value of .09 was higher than the desired cut-off value of .05 (Hu & Bentler, 1999), indicating a moderate fit. The comparative fit index (CFI) was .76. A CFI value of .90 or higher is desirable for indication of good model fit (Hu & Bentler, 1999).

Based on the model fit statistics, the hypothesized model was not acceptable for approximating the covariance matrix as well as mediation/indirect effects. Therefore, inferences using parameter estimates of the hypothesized model results could be misleading due to biased standard errors and effects (Tabachnick & Fidell, 2007). The standardized model coefficients and associated standard errors for the hypothesized model are presented in Table 2 for purposes of reporting.

Table 2

Standardized Model Coefficients, Standard Errors, and Associated p-values of the Hypothesized Path Model

Type / Variable (Y)	Variable (X)	*β*	SE β	*p*
Directional (Y on X)				
Work performance				
	Self-efficacy	.09	.10	.36
	Cognitive Ability	.24	.07	.00*
	H Factor	-.03	.12	.83
	Working Memory: OS	.14	.07	.06
Self-efficacy				
	H Factor	.46	.10	<.01
	Working memory: OS	.04	.08	.84
	Cognitive ability	-.01	.08	.16

Note. $N = 197$. p-values given are for 2-sided test.

Based upon the estimates in the hypothesized yet poorly fitting and unacceptable model, only hypothesis 1 was supported. Moreover, using simultaneous regression, independent of model fit, I found that cognitive ability was the only significant predictor of performance ($\beta = .23$, $p < .05$). Additionally, all indirect effects of Ability, H Factor, and Working Memory (O-span) were not statistically significant.

Adjusted Model

Several theoretically grounded alternative models were tested to offer a better assessment of the proposed hypotheses. One potential limitation of the present data is related to the fact that self-efficacy has generally shown a positive correlation with performance in previous research. Therefore, the psychometric properties of the measures were explored—particularly self-efficacy and honesty-humility. One of the indicators for the H Factor loaded poorly even though prior research supported this aspect theoretically and empirically (i.e., greed avoidance indicator). As a result, the observed total score for the H Factor was used in lieu of a latent score. Additionally, three of the five efficacy items were not strong measures of efficacy and as such, only the two primary items recommended by Bandura (1997) were used.

Finally, with the relatively small sample size, the parameter-to-sample size ratio was quite small. Therefore estimated the model was estimated using composite scores in a path analysis. The relative χ^2 value was 0.59 (4.68/8 = 0.59). The chi-square test of model fit was also not statistically significant, indicating a good model fit, χ^2 (8) = 4.68, p = .791. The RMSEA value was < .0005 [95% CI (0, 0.055)], with the probability of an RMSEA of .05 or less of 94%. The CFI of the model was 1.0, which was the recommended value of .90 or larger. The values of the Akaike information criteria (AIC = 2469.09) and the Bayesian information criteria (BIC = 2508.48) were both less than the values for the full hypothesized model, indicating a better fit. Based on the model fit statistics, the adjusted model was acceptable for approximating the covariance matrix. The standardized model coefficients and associated standard errors for the adjusted model are presented in Table 3. The path diagram of the adjusted SEM with standardized model coefficients is presented in Figure 2.

Table 3

Standardized Model Coefficients, Standard Errors, and Associated p-values of the Adjusted SEM

Type / Variable (Y)	Variable (X)	*β*	SE β	*p*
Directional (Y on X)				
Work performance				
	Self-efficacy	0.20	0.09	<.01
Self-efficacy				
	H Factor	0.17	0.12	.02
	Working memory: OS	0.16	0.12	.02
	Cognitive ability	0.05	0.12	.18

Note. N = 197. p-values given are for 2-sided test.

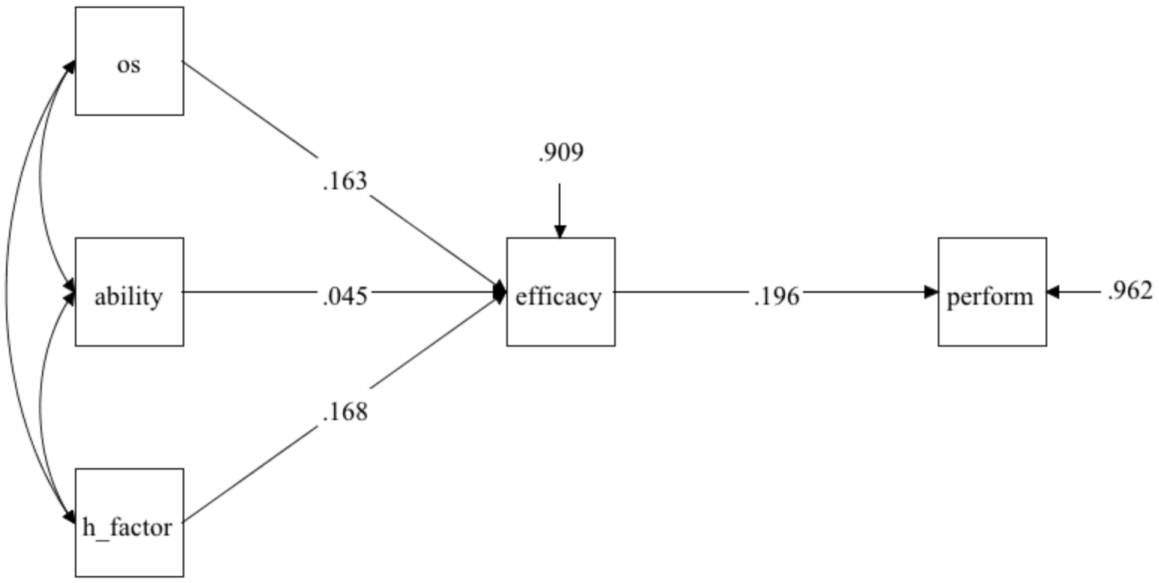

Figure 2. Path diagram with model coefficients for adjusted model.

Hypotheses 4–6 predicted that self-efficacy would mediate the relationships of ability (hypothesis 4), the H Factor (hypothesis 5), and working memory (hypothesis 6) with job performance. The mediation hypothesis was examined by obtaining point estimates of the indirect effects and the bias-corrected and accelerated 95% confidence intervals around the

effects using a bootstrapping method (see MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2004; Shrout & Bolger, 2002; Williams & MacKinnon, 2008). The model was fully saturated and thus provided perfect fit to the data; however, fit was not the overarching goal for these analyses.

The direct relationship between ability and performance was not statistically significant (unstandardized direct effect = 0.153, 95% CI = -0.02 to 0.33). The specific indirect effect through self-efficacy was also not statistically significant (effect = 0.006, 95% CI = -0.01 to 0.05). The direct relationship between working memory and performance was not statistically significant (unstandardized direct effect = 0.17, 95% CI = -0.07 to 0.41). The specific indirect effect through self-efficacy (effect = 0.03, 95% CI = 0.01 to 0.11) was statistically significant. The direct relationship between the H Factor and performance was not statistically significant (unstandardized direct effect = 3.89, 95% CI = -4.79 to 12.32). The specific indirect effect through self-efficacy (effect = 1.12, 95% CI = 0.03 to 3.57) was statistically significant. The results from mediation analyses thus lend full support for hypotheses 5 and 6. The hypothesized model and the standardized estimates are presented in Figure 2.

CHAPTER V

DISCUSSION

To develop knowledge about which employee talents and individual capacities fit organizational contexts and enhance job performance, this research aimed to investigate the role of working memory, cognitive ability, and the H Factor in predicting work performance as mediated by self-efficacy. 197 employees from nine different food distribution plants across the United States completed measures of working memory, cognitive ability, H Factor, and self-efficacy. In addition, supervisors completed assessments of employees' job performance on several dimensions to avoid common source sampling biases.

Data from the measures employed in this study were subjected to path analysis to test the hypothesized model of relationships between working memory, cognitive ability, self-efficacy, H Factor, and work performance. The final path model provided support for the predicted relationships between the variables of this study and for some of the more specific hypotheses under investigation. Ultimately, it was revealed that cognitive ability, working memory, and H Factor all uniquely predicted performance, albeit via different mechanisms. Cognitive ability directly predicted performance while working memory and H Factor did so via self-efficacy.

This chapter provides a review of the findings of this study as well as a discussion of their theoretical and practical implications and significance. The limitations of the study and the

research design and execution are also discussed in this chapter, and future directions for further research are raised. Overall, the current research makes an important contribution to developing knowledge on the individual employee factors that may be sought to facilitate optimum work outcomes. The findings are significant because the success of a business unit or organization is largely predicated on the performance of its employees, who play a significant role in determining overall output and results.

Review of the Findings

The findings of this study were relatively consistent with the theoretical model of relationships between cognitive ability, working memory, the H Factor, self-efficacy, and job performance. The path model showed that self-efficacy was a linking mechanism for cognitive ability, working memory, and H Factor with performance. As shown in the significant path estimates, self-efficacy, working memory (O-span), and the H Factor were significant contributors to the full model. In contrast, cognitive ability was at most a direct predictor of performance and did not impact performance via self-efficacy.

The results of this study also provided reasonable support for the specific hypotheses that were tested. Regarding the first hypothesis, cognitive ability was found to be significantly related to work performance. Thus, the finding is consistent with previous research in which cognitive ability has been predictive of higher job performance of employees (e.g., Kuncel et al., 2014; Schmidt & Hunter, 2004).

The second hypothesis, that working memory is positively related to work performance, also received reasonable support. Indeed, employee performance on the O-span task showed the strongest relationship with work performance, whereas performance on the S-span task was not related to job performance—likely due to the development of this new task and computer coding

issues (discussed below). Overall, the finding that working memory was related to job performance is consistent with findings indicating that it predicts language fluency, sentence learning, reading comprehension, academic achievement, the ability to follow directions, multitasking, reasoning, and complex problem-solving (e.g., Daneman & Carpenter, 1980; Kane & Engle, 2002). Distinct from cognitive ability, working memory in terms of verbal comprehension would appear to relate to the capacity for participants in this study to learn and recall important verbal information in their organizational context. While not reported in the results section, a simultaneous regression was run with O-Span and Cognitive Ability predicting performance and both predictors accounted for significant and unique variance in performance. This speaks highly to the promise that working memory is at least an equal predictor of performance as cognitive ability.

The findings also demonstrated support for the third hypothesis, that the honesty-humility (H Factor) dimension of the HEXACO model would be positively related to work performance. The H Factor was significantly related to job performance at the bivariate level and indirectly related via self-efficacy. The relationship between the H Factor and work performance is a relatively new finding that reflects previous research outcomes. For example, Zettler et al. (2013) found that high levels of Honesty-Humility were related to situational decision-making, ethics, and professional growth. Moreover, Osibanjo et al. (2015) reported that work ethics in terms of honesty and integrity contributed to positive work performance. Finally, Collins (2005) found that CEOs who possessed a combination of humility and strong professionalism were better performers in terms of financial outcomes and more effective in their management of junior staff. Thus, taking the H Factor as a distinct personality trait, the findings support the hypothesis

that employees with greater honesty and humility in the workplace are considered to be better performers at work—an outcome that is due to an increase in self-efficacy.

The next set of hypotheses in this study investigated the mediating role of self-efficacy in the relationship between job performance and cognitive ability, the H Factor, and working memory. Inconsistent with this hypothesis, there was no evidence that self-efficacy mediated the relationship between cognitive ability and work performance. Instead, cognitive ability was found to be significantly directly associated with work performance, yet had no significant relationship with self-efficacy—hence, there was no indirect effect (i.e., mediation was nonsignificant). This is somewhat surprising given that prior research supports the notion that self-efficacy mediates the relationship between cognitive ability and performance (e.g., Austin & Klein, 1996; Chen et al., 2000; Phillips & Gully, 1997). However, because cognitive ability was found to predict performance in line with meta-analytics estimates (Schmidt & Hunter, 1998), confidence in the results remains.

The findings showed that self-efficacy mediated the relationship between the H Factor and work performance, thereby providing support for hypothesis five of this study. This finding is relatively unique as there has been little, if any, empirical research to test the relationship between Honesty-Humility, self-efficacy, and job performance. Nevertheless, researchers have linked humility and sincerity with a heightened level of self-awareness and emotional maturity, which reflects the construct of self-efficacy (Yokley, 2012). Moreover, honesty and humility have been shown to be linked to a person's willingness to recognize areas of weakness and an ability to learn new skills and adapt to changing demands in the workplace (e.g., Owens et al., 2010; Weick, 2001). As such, these skills reflect the capacity for self-efficacy: they act as positive, motivating factors that can boost one's confidence to facilitate change and take action.

Importantly, the findings of this study uniquely show that honesty and humility are positively related to job performance because of their positive impact on increasing employee's self-efficacy.

The findings also provided support for the final hypothesis, that self-efficacy would mediate the relationship between working memory and work performance. Specifically, it was found that working memory O-span was significantly directly associated with work performance, that working memory O-span was significantly positively related to increases in self-efficacy, and that the mediator of self-efficacy was significantly positively associated with work performance. These findings were further strengthened by results of the indirect tests conducted in MPlus. To a certain extent, these relationships do reflect the findings of previous research. For example, Pintrich (1999) found that high working memory was associated with higher self-efficacy, which facilitated self-regulated learning. da Costa Leite (2013) also found a relationship between self-efficacy, working memory, and performance in the academic context of a research-intensive instructional setting. Yet, the findings of this study appear to be the first to empirically show the mediating role of self-efficacy in the relationship between working memory and job performance. Overall, this finding gives support to the idea that higher working memory positively impacts job performance because of its effect on employees' belief in their capacity to organize, develop, and execute courses of action and behavior to produce positive accomplishments.

Theoretical Implications

The results of this study raise several implications within the context of developing knowledge about which employee talents and individual capacities fit organizational contexts and enhance job performance. First, the findings confirmed the conceptual relationship between

cognitive ability, working memory, and job performance. Indeed, cognitive ability and working memory were found to be significantly related, albeit distinct, concepts. Whereas cognitive ability is the capacity to learn different lessons from one's experiences, solve a variety of problems, and use one's knowledge to adapt to new situations (O'Boyle et al., 2005), working memory reflects the capacity to retrieve information from memory in order to perform a task (Tulving, 2000). Working memory is the critical component that enables individuals to perform at higher levels (Swanson, 2015). Nevertheless, both constructs appear to reflect the capacity for superior job performance and, as the findings of this study indicate, this conceptual relationship extends to supervisors' perceptions of the work performance of their subordinates.

The findings also raise implications about how personality factors relate to job performance. In their meta-analysis, Barrick and Mount (1991) demonstrated that the Conscientiousness and Extraversion elements of the Five-Factor Model of personality are relatively strong predictors of task performance. The approach of the current study was to extend knowledge on the role of personality in job performance by an investigation of honesty and humility, or the H Factor of the HEXACO model (Lee & Ashton, 2004). Conceptually, the H Factor is associated with various positive outcomes such as prosocial behaviors, sincerity, loyalty, faithfulness, modesty, and cooperation, as well as being open to advice from others, and keeping accomplishments in perspective (Aghababaei et al., 2014; Hilbig et al., 2014). Importantly, the findings of this study demonstrate that the prosocial aspects of personality traits captured by the H Factor appear to translate to assessments of employee job performance. The findings also imply that the honesty-humility personality factor may also translate into other job performance elements, such as organizational citizenship behavior and job commitment, or may relate to negative work outcomes, such as deviant or unethical behavior.

Furthermore, the findings provided implications for the role of self-efficacy in employee and organizational outcomes. Although self-efficacy has been shown to have a positive relationship to job performance (e.g., Chen et al., 2001; Stajkovic & Luthans, 1998), its role as a mediator between personality factors, cognitive ability, and work outcomes has not been thoroughly investigated; most significantly, no extant research to date has investigated the H Factor in this process. Although the findings of this study demonstrate that the H Factor related to work performance at the bivariate level, the H Factor was indirectly linked to performance via self-efficacy, even in the presence of cognitive ability and working memory on performance and self-efficacy. This is a powerful finding that supports the 'H' in the HEXACO for organizational behavior scholars.

Practical Implications

The success of any business unit or organization is based on its human capital—the performance of its employees plays a critical role in determining the overall output and results of an organization (Hansen, 2008). Therefore an effective hiring process is particularly imperative because it confirms that those individuals selected for employment are best suited for that specific organization in order to both enable the employee's individual growth and facilitate the organization's achievement of its goals. Whereas work performance can be affected by the fit between the job, the individual, and the organizational context (Battistelli et al., 2013; Djeriouat & Trémolière, 2014), the present study's findings raise practical implications about the individual factors that specifically relate to job performance and outcomes.

The findings showed that the job performance of employees is related to a combination of cognitive ability, working memory, personality (honesty-humility), and self-efficacy. In a practical sense, organizations may assess these attributes when selecting and screening

prospective employees, or when considering promotion and advancement of current employees, since it appears that a portfolio of assessments targeting working memory, cognitive ability, and H Factor do indeed predict increased performance. Moreover, employee training programs may encompass elements that encourage employees to develop self-efficacy in particular, because the findings imply that cognitive and personality skills impact job performance because of a person's belief in their capacity to achieve desirable outcomes. Encouraging employees to develop their self-efficacy thus appears to be a way to ensure that the best of an individual's cognitive ability, working memory, and personality traits are expressed in the workplace in terms of their job performance.

Whereas the findings of this study imply that hiring strategies should take into account an individual's cognitive skills, personality, and self-efficacy, the results also suggest that it is important to assess the job requirements and consider what mix of individual skills will best mesh with those requirements. With the right person–job fit (Cable & Parsons, 2001), individuals will be more likely to effectively adjust to the organizational environment and culture such that they perform at an optimum level.

Limitations

Despite the important theoretical and practical implications of this study's findings, there are several methodological limitations to the study design and execution that impact the generalizability of the findings. The findings are limited by the number of participants who completed the study and the high number of invalid and incomplete responses (more than 30%). Moreover, participants in the study do not necessarily consist of a representative sample of the North American working population. Additionally, self-selection bias (Bowden, 1986) is another potential limitation because the set of participants did not reflect a random sample. Despite these

issues, a reasonable sample size was attained from various locations, which broadly represented the North American working population in terms of gender, age, and work experience.

A further limitation of the study is that the correlational nature of the research design does not produce information about definitive cause–effect relationships between cognitive ability, working memory, honesty-humility, self-efficacy, and work performance. Indeed, correlational research is quite common in organizational behavior research and this trend reflects a general limitation of the research field, where there is a need for more experimental and longitudinal research designs (Grant & Wall, 2009). Nevertheless, the correlational method provided several practical and pragmatic benefits in this study, including the capacity to investigate a range of concepts (personality, cognitive ability, and self-efficacy) related to job performance simultaneously. As shown by the reliabilities of the measures employed, the materials provided a relatively valid and efficient means of data collection.

The findings are also limited by the validity of the self-efficacy measure employed in the research. Although a six-item measure was constructed and utilized, its reliability was questionable. Moreover, a reduced six-item scale did not provide a good fit to the path model analysis and did not constructively replicate a relationship with performance (Stajkovic & Luthans, 1998). As a result, only two self-efficacy items were employed for analysis. Given these conditions, the findings relating to self-efficacy should be treated with a degree of caution. A further limitation of the study is that employees' superiors evaluated their job performance. Whereas supervisors are likely to be in the best position to evaluate performance, we cannot rule out the possibility that they may have been biased or prejudiced in their appraisals. Indeed, performance evaluation biases are a relatively common feature in organizational settings (Poon, 2004) and they have been found to have negative effects on job satisfaction and retention.

A final and more general limitation of the study is that the investigation focused on the impact of individual difference factors on job performance. Whereas cognitive ability, working memory, personality, and self-efficacy were shown to be positively related to job performance, work performance is a multidimensional construct that encompasses the full spectrum of expectations placed on employees based on their job position and description (Loi et al., 2011). Successful job performance is about a match between the individual, the job specifications, and the organizational climate. As such, the findings are limited to the individual factors that relate to job performance and do not provide insights into how the type of job and the organizational setting may moderate individual work outcomes.

Future Directions

The findings of this study raise several possibilities for future research to further knowledge about which employee talents and individual capacities fit organizational contexts and enhance job performance. Although it was relatively clear from the findings that personality, cognitive capacity, and self-efficacy positively relate to job performance, these relationships may be clarified further through future research with a more rigorous design. It would be worthwhile to conduct research with a larger and more diverse sample of participants to improve the generalizability of the findings. Moreover, the measure of self-efficacy employed in this study had limitations, and future research might utilize a well-validated scale or construct a new instrument through a pilot study to better triangulate its validity to the specificities of the organizational context. Future research may also employ more objective measures of job performance rather than supervisor appraisals.

Currently, very few studies have investigated the impact of the HEXACO H Factor on job performance. Whereas the findings of this study do support the idea that honesty-humility

relates to work performance, albeit mostly via self-efficacy, future research could further clarify this relationship. Indeed, the findings imply that the honesty-humility personality factor may also translate into other job performance elements such as organizational citizenship behavior and job commitment, or that it may relate to negative work outcomes such as deviant or unethical behavior. While I collected such behaviors, my model proposed testing role-based performance, so these specific aspects of performance were aggregated into a single dimension. As a relatively new and distinct personality construct, the H Factor has a wide range of implications for employees and businesses that may be the subject of future research to confirm its organizational applicability.

Similar to most research methods in the empirical literature on organizational behavior, this study employed a correlational design to test the effects of personality, cognitive ability, and self-efficacy on job performance. As previously mentioned, there are very few studies that have conducted experimental or longitudinal investigations in organizational contexts (Grant & Wall, 2009), and even fewer studies have investigated cause–effect relationships between personality, cognitive ability, self-efficacy, and work performance. Although the findings from correlational designs provide certain methodological benefits, they lack the capacity to show causal relationships. It would be worthwhile in future research to conduct cross-sectional or between-groups analysis to determine if employees who are relatively high or low on cognitive ability, working memory, personality, and self-efficacy show more or less improved job performance outcomes. Future longitudinal research might also track job performance over time to see how personality, cognitive ability, and self-efficacy relate to work outcomes in the long term. As human resources are critical to organizational success, knowledge developed from longitudinal

research about how people with different personality and cognitive skills perform their jobs over time would provide significant organizational advantages.

Conclusion

In conclusion, the findings from this study provide several insights and raise a number of implications about the role of individual difference factors in relation to positive job performance in employees from a large organization. It was shown that cognitive abilities, working memory, and honesty-humility are positively related to higher evaluations of job performance and that these relationships are mediated by self-efficacy. In essence, employees' belief in their own capacities appears to explain why their personality and cognitive abilities lead to better job performance. Despite the limitations of the findings, they raise several theoretical and practical implications that may be applied in the real world of human resource management. Various directions for future research are also suggested by the findings, including investigations that develop more precise knowledge about how person–job fit affects job performance and how the H Factor may generalize to a range of positive work outcomes. Nonetheless, the research in this study has provided useful insights into which employee talents and individual capacities fit organizational contexts and enhance job performance, as well as the important human capital aspect of most modern businesses. Overall, it can be concluded that WM+g+H^2=PERFORMANCE, albeit some of these effects pass through self-efficacy.

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APPENDIX A

Self-Efficacy Measure Based on a 5-Point Scale

1. I believe I can successfully complete all work tasks for my job.
2. On average, other employees are probably not as capable of doing as well on their jobs as I am.
3. I feel confident in my ability to perform well at work.
4. I feel that I am as capable of performing as well on work tasks as other employees.
5. If given a new task at work, I am confident I will be able to successfully complete the task.
6. I am unsure if I can do my job as well as others.

VITA

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